of International Application No. PCT/GB97/00126 filed January 16, 1997, the respective disclosures of which are incorporated herein by reference.--

IN THE CLAIMS:

Please amend the claims as follows:

Please cancel claims 1-6, 11, 26, and 27, without prejudice.

Please amend claims 7-12, 14, 15, 16, 18, 20, 21, 28-31, as follows:

7. (Amended) Method [according to any preceding claim,] of forming a nozzle in a nozzle plate for an ink jet printhead, the nozzle having a nozzle inlet and a nozzle outlet in respective opposite faces of said nozzle plate, the method comprising the steps of:

directing a high energy beam towards said nozzle plate; introducing divergence into said beam; thereafter directing said beam at a single aperture of a mask, thereby to shape said beam; and thereafter passing said beam through beam converging means prior to impingement on the face of said nozzle plate in which said nozzle outlet is formed, thereby to form a nozzle, the nozzle outlet being conjugate through said beam converging means with said single aperture;

wherein the step of introducing divergence into said beam comprises splitting said beam into a number of sub-

beams, each sub-beam having divergence, the origin of divergence of each sub-beam lying apart from the point at which the respective sub-beam is created by splitting; thereafter passing the sub-beams through further beam converging means prior to recombining and directing the sub-beams through said single aperture of a mask, wherein the dimensions of the section of said recombined beam directly prior to impinging the plane of said mask are substantially equal to the dimensions of the aperture in said mask; and,

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wherein said beam is split by [passage] passing the beam through an array of optical elements to create an array of sub-beams; thereafter directing said array of sub-beams [being thereafter directed] towards first reflecting means for reflecting towards second reflecting means, said second reflecting means reflecting towards said nozzle plate; the positional relationship of said first and second reflecting means being such that a parallel beam impinging on said first reflecting means is reflected from said second reflecting means as a converging beam; and the arrangement of said optical elements being such that all incoming sub-beams are directed by said first reflecting means towards said second reflecting means, thereafter to impinge on said nozzle plate.

8. (Amended) Method [according to any preceding claim,] of forming a nozzle in a nozzle plate for an ink jet printhead, the nozzle having a nozzle inlet and a nozzle outlet in respective opposite faces of said nozzle plate, the method comprising the steps of:

directing a high energy beam towards said nozzle plate; introducing divergence into said beam; thereafter directing said beam at a single aperture of a mask, thereby to shape said beam; and thereafter passing said beam through beam converging means prior to impingement on the face of said nozzle plate in which said nozzle outlet is formed, thereby to form a nozzle, the nozzle outlet being conjugate through said beam converging means with said single aperture;

wherein the step of introducing divergence into said beam comprises splitting said beam into a number of sub-beams, each sub-beam having divergence, the origin of divergence of each sub-beam lying apart from the point at which the respective sub-beam is created by splitting; thereafter passing the sub-beams through further beam converging means prior to recombining and directing the sub-beams through said single aperture of a mask, wherein the dimensions of the section of said recombined beam directly prior to impinging the plane of said mask are substantially equal to the dimensions of the aperture in said mask; and,

wherein said high energy beam is split by [passage] passing said beam through an array of optical elements to create an array of sub-beams, said array of optical elements having a greater width in a first direction than in a second direction orthogonal to said first direction, with said first and second directions lying perpendicular to the direction of impingement of said beam on said array; thereby to form a nozzle having a bore with an angle of taper relative to the nozzle axis in a direction corresponding to said first direction that is greater than the angle of taper of the nozzle bore in a direction corresponding to said second direction.

9. Method [according to any preceding claim,] of forming a nozzle in a nozzle plate for an ink jet printhead, the nozzle having a nozzle inlet and a nozzle outlet in respective opposite faces of said nozzle plate, the method comprising the steps of:

directing a high energy beam towards said nozzle plate; introducing divergence into said beam; thereafter directing said beam at a single aperture of a mask, thereby to shape said beam; and thereafter passing said beam through beam converging means prior to impingement on the face of said nozzle plate in which said nozzle outlet is formed, thereby to form a nozzle, the nozzle outlet being conjugate through said beam converging means

with said single aperture;

wherein the step of introducing divergence into said beam comprises splitting said beam into a number of sub-beams, each sub-beam having divergence, the origin of divergence of each sub-beam lying apart from the point at which the respective sub-beam is created by splitting; thereafter passing the sub-beams through further beam converging means prior to recombining and directing the sub-beams through said single aperture of a mask, wherein the dimensions of the section of said recombined beam directly prior to impinging the plane of said mask are substantially equal to the dimensions of the aperture in said mask; and,

wherein said high energy beam is directed at a first planar reflecting surface lying at an angle to said first direction, said surface being arranged so as to reflect said beam towards further second beam reflecting means so arranged as to both invert said beam and direct said beam along an axis [collinear] colinear with said first axis extending in a first direction; said first planar reflecting surface and said further reflecting means being [fixedly located] fixed relative to one another, thereby to form an assembly, and rotating said assembly about said first axis, said beam thereafter impinging on said nozzle plate, thereby to form a nozzle.

10. (Amended) Method according to [any preceding] claim 7, wherein the power of said high energy beam is

initially held low and is increased with increasing depth of the nozzle formed in said nozzle plate.

11. (Amended) Method according to [any preceding] claim 7, wherein a further mask is interposed between the mask and the beam converging means.

Claim 12, line 8 please delete "characterised in that" and substitute --wherein-- therefor.

Claim 14, line 1 please delete "or 13".

Claim 15, line 1 please delete "or 13".

Claim 16, line 8 please delete "characterised in that" and substitute --wherein-- therefor.

Claim 18, line 1 please delete "or 17".

Claim 20, line 1 please delete "or 19".

21. (Amended) Method according to [any of claims 16 to 20] claim 16, wherein said arrangement of optical elements is such that no sub-beams from optical elements located at the centre of said array are reflected by said first and/or second reflecting means.

28. (Amended) Apparatus for [use with the method of claim 1, and] forming a nozzle in a nozzle plate for an ink jet printhead, said apparatus comprising a source of a high energy beam, mask means having a single aperture [and]; beam converging means [characterised by]:

an array of optical elements for splitting said beam into a number of sub-beams each having divergence, [the] an origin of divergence of each sub-beam lying apart from the plane of said array; and further beam converging means adapted to recombine said sub-beams; said array and further beam converging means being positioned relative to said mask means such that the dimensions of the section of said recombined beam directly prior to impinging the plane of said mask are substantially equal to the dimensions of the aperture in said mask.

29. (Amended) Apparatus for [use with the method of claim 16, and] forming a nozzle in a nozzle plate for an ink jet printhead, said apparatus comprising a source of a high energy beam; an array of optical elements for creating an array of sub-beams each having divergence, [the] an origin of the divergence of each sub-beam lying apart from the respective optical element[;], said array of sub-beams having a greater width in a first direction than in a second direction orthogonal to said first direction, said first and second directions lying perpendicular to the direction of impingement of said beam on said array; and beam converging means adapted to converge said sub-beams on the nozzle plate.

30. (Amended) Apparatus for [use with the method of claim 16, and] forming a nozzle in a nozzle plate for

an ink jet printhead, said apparatus comprising a source of a high energy beam; an array of optical elements for creating an array of sub-beams each having divergence, [the] an origin of the divergence of each sub-beam lying apart from the respective optical element; first reflecting means for reflecting said array of sub-beams[,] ; and second reflecting means located relative to said first reflecting means such that a parallel beam impinging on said first reflecting means is reflected from said second reflecting means as a converging beam; the arrangement of said optical elements being such that all incoming sub-beams are directed by said first reflecting means towards said second reflecting means.

31. (Amended) Apparatus for [use with the method of claim 23, and] forming a nozzle in a nozzle plate for an ink jet printhead, said apparatus comprising a source of a high energy beam having a first axis extending in a first direction; and an assembly comprising a first reflecting surface lying at an angle to said first direction and, a second and a third reflecting surfaces, said first, second and ~~second~~ third reflecting surfaces being fixedly located relative to one another such that said high energy beam is reflected by said first reflecting surface towards said second reflecting surface, thereby to both invert said beam and direct said beam along on axis collinear with said first axis extending in a first direction; said